

ABSTRACT OF THE DISCLOSURE

Methods, systems and probes communicate signals from a transducer for imaging or connection with an imaging system. Beamforming-related electronics are positioned in the connector housing of the transducer probe assembly. For example, analog-to-digital converters are positioned in the connector housing. Power is provided through connection with the ultrasound imaging system. Fans or other heat-dissipating structures are also positioned within the connector housing. Other beamformer electronics, such as delays and sums, are positioned in the imaging system, partly in the connector housing or entirely in the connector housing. Since the analog-to-digital converters are provided in the connector housing, partial digital beam forming may be provided in the transducer probe assembly. The length of the transducer cables is held constant to avoid interference and transmission line effects due to line-length variation. The number of cables and other interconnections from the transducer array to the analog-to-digital converters is unconstrained by the number of connectors or channels provided by the imaging system. Data compression provided by the electronics of the transducer probe assembly provides independence of the number of system channels from transducer channels.